Forestry Department
Food and Agriculture Organization of the United Nations

GLOBAL FOREST RESOURCES ASSESSMENT

COUNTRY REPORTS

UNITED STATES VIRGIN ISLANDS

FRA2005/080
Rome, 2005

The Forest Resources Assessment Programme

Sustainably managed forests have multiple environmental and socio-economic functions important at the global, national and local scales, and play a vital part in sustainable development. Reliable and up-to-date information on the state of forest resources - not only on area and area change, but also on such variables as growing stock, wood and non-wood products, carbon, protected areas, use of forests for recreation and other services, biological diversity and forests' contribution to national economies - is crucial to support decision-making for policies and programmes in forestry and sustainable development at all levels.

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Forest Resources Assessment Programme. This country report forms part of the Global Forest Resources Assessment 2005 (FRA 2005), which is the most comprehensive assessment to date. More than 800 people have been involved, including 172 national correspondents and their colleagues, an Advisory Group, international experts, FAO staff, consultants and volunteers. Information has been collated from 229 countries and territories for three points in time: 1990, 2000 and 2005.

The reporting framework for FRA 2005 is based on the thematic elements of sustainable forest management acknowledged in intergovernmental forest-related fora and includes more than 40 variables related to the extent, condition, uses and values of forest resources. More information on the FRA 2005 process and the results - including all the country reports - is available on the FRA 2005 Web site (www.fao.org/forestry/fra2005).

The Global Forest Resources Assessment process is coordinated by the Forestry Department at FAO headquarters in Rome. The contact person for matters related to FRA 2005 is:

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Contents

1 Table T1 – Extent of Forest and Other wooded land

1.1 FRA 2005 Categories and definitions

Category	Definition
Forest	Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds *in situ*. It does not include land that is predominantly under agricultural or urban land use.
Other wooded land	Land not classified as "Forest", spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5-10 percent, or trees able to reach these thresholds *in situ*; or with a combined cover of shrubs, bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.
Other land	All land that is not classified as "Forest" or "Other wooded land".
Other land with tree cover (Subordinated to "Other land")	Land classified as "Other land", spanning more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity.
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.

1.2 National data

1.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Padda, D. S. 1976. Virgin Islands Forestry Research: A Problem Analysis. Virgin Islands Agricultural Experiment Station Report No. 9. College of the Virgin Islands, Agricultural Experiment Station, St. Croix, USVI	Unknown[1]	Forest cover	1976	This estimate comes from a forestry research problem analysis published in 1976. The authors mention using aerial photographs from 1971, although they do not explicitly state this methodology was used for estimating forest cover.
Conservation Data Center, UVI-ECC. 2001. Virgin Islands Rapid Ecological Assessment. Published by the University of the Virgin Islands, No. 2 John Brewers Bay St. Thomas, VI 00802	High[2]	Vegetation cover, land cover	1994-2000	Forest coverage estimates were extracted from a GIS vegetation map.

[1] Quality cannot be assessed because there is no documentation of the methods or definitions.
[2] Assessed as High quality because methods and vegetation class definitions are well documented by the Conservation Data Center's vegetation mapping metadata and accompanying documentation.

1.2.2 Classification and definitions

National class	Definition
Closed Forest (1976)	Closed canopy forest, percentage of canopy closure undefined.[1]
Dry forest (2000)	Closed canopy, height from 7-20 m. Includes gallery semi-deciduous forest, semi-deciduous forest, semi-evergreen forest, and drought deciduous forest. [2]
Moist forest (2000)	Closed canopy, height from 10-30 m. Includes seasonal evergreen forest, upland moist forest, gallery moist forest, and basin moist forest communities. [2]
Woodland (2000)	25-60% canopy cover, height from 5-20 m. Includes evergreen woodland, gallery semi-deciduous woodland, semi-deciduous woodland, and drought deciduous woodland. [2]
Mangrove (2000)	Closed canopy of mangrove species. Includes mangrove forest and mangrove woodland communities). [2]

[1] No definitions of classes given in original data source.
[2] National classes documented in more detail in the metadata that accompanies vegetation maps.

1.2.3 Original data

1976: Closed forest: 14300 hectares

2000: See following table:

National class	(1000 ha)[1]
Dry forest	8.3
Moist forest	1.1
Woodland	1.5
Mangrove	0.1
Total forest	**11.1**
Total other wooded land	**NDA[2]**
Total other land	**25.3**
Total land	**36.4**

[1] Data from the Rapid Ecological Assessment by the Virgin Islands Conservation Data Center
[2] No data available for Other Wooded Land

1.3 Analysis and processing of national data

1.3.1 Calibration

Source	Total Land Area (1000 ha)	Total Forest Area 2000 (1000 ha)
National data	36.4	11.1
FAOSTAT	34.0	10.4[1]

[1] Forest cover calibrated to the FAOSTAT land area was calculated by multiplying the percent forest cover in 2000 (30.43%) by the FAO-STAT land area for the US Virgin Islands

1.3.2 Estimation and forecasting

National class	1976 (1000 ha)	1990 (1000 ha)[1]	2000 (1000 ha)	2005 (1000 ha) [1]
Dry forest	NDA[2]	9.0	7.9	7.2
Moist forest	NDA[2]	1.2	1.0	0.9
Woodland	NDA[2]	1.6	1.4	1.3
Mangrove	NDA[2]	0.1	0.1	0.1
Total forest area	**14.3**	**11.9**	**10.4**	**9.5**
Non-forest	19.7	22.1	23.6	24.5
Total land area	34.0	34.0	34.0	34.0

[1] Data for the year 1990 was estimated using linear interpolation of the data from 1976 and 2000 (annual loss of 164.75 ha/yr). Similarly, data for year 2005 was forecasted using the same linear trend.
[2] No data available for forest by national classes in 1976. Forest area change was assumed to be the same for all classes.

1.4 Reclassification into FRA 2005 classes

	FRA 2005 Categories				
National Classes	**Forest**	**OWL**	**Other land**	**Total**	**OLWTC**
Dry forest	100%			100%	NDA[1]
Moist forest	100%			100%	NDA[1]
Woodland	100%			100%	NDA[1]
Mangrove	100%			100%	NDA[1]
Non forest			100%	100%	NDA[1]

[1] No data available for other land with tree cover.

1.5 Data for National reporting table T1

FRA 2005 Categories	Area (1000 hectares)		
	1990	**2000**	**2005**
Forest	11.9	10.4	9.5
Other wooded land	NDA[1]	NDA[1]	NDA[1]
Other land	22.1	23.6	24.5
...of which with tree cover [1)]	NDA[1]	NDA[1]	NDA[1]
Inland water bodies	0	0	0
TOTAL	**34.0**	**34.0**	**34.0**

[1] No data available for Other Wooded Land

1.6 Comments to National reporting table T1

The forest area estimates that appear in table 1 are based on data from two data sources. The first data source is a 1976 forest cover estimate published in a forestry research problem analysis. The authors mention using aerial photographs from 1971, although they do not explicitly state what methodology was used for estimating forest cover, or whether their forest cover estimate is for 1971, or if the estimates are for 1976 and some form of extrapolation was used. The 1976 forest cover figure was used for the Country submission to the FRA 2000 FAO Forest Resources Assessment, United States Virgin Islands.

The estimate of forest cover for 2000 comes from a vegetation map produced as part of a Rapid Ecological Assessment by the Virgin Islands Conservation Data Center. This map was derived from aerial photographs that spanned the years 1994 to 2000. The data is in the form of GIS coverages which are currently available for purchase from the Virgin Islands Conservation Data Center.

Note that the national classes and definitions cited in table 1.2.3 are a simplified versions of the USVI Vegetation Community Classification System used in the Virgin Islands Conservation Data Center Vegetation Map. More detailed descriptions exist in the vegetation map documentation and GIS file metadata.

To calibrate the forest cover estimate, the percentage of forest cover in 2000 (30.43%) was estimated from the GIS version of the Virgin Islands Conservation Data Center's vegetation map for the US Virgin Islands in 2000. Then the percent forest cover was multiplied by the FAO-STAT land area for the US Virgin Islands.

After calibration, an annual rate of forest cover change (a loss of 164.74 ha annually) was estimated for the years 1976 to 2000. This rate of change was used to estimate and forecast forest area in 1990 and 2005.

2 Table T2 – Ownership of Forest and Other wooded land

No information has been found to support any estimates for this reporting table.

3 Table T3 – Designated function of Forest and Other wooded land

No information has been found to support any estimates for this reporting table.

4 Table T4 – Characteristics of Forest and Other wooded land

No information has been found to support any estimates for this reporting table.

5 Table T5 – Growing stock

5.1 FRA 2005 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees more than X cm in diameter at breast height (or above buttress if these are higher). Includes the stem from ground level or stump height up to a top diameter of Y cm, and may also include branches to a minimum diameter of W cm.
Commercial growing stock	The part of the growing stock of species that are considered as commercial or potentially commercial under current market conditions, and with a diameter at breast height of Z cm or more.

5.2 National data

5.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Padda, D. S. 1976. Virgin Islands Forestry Research: A Problem Analysis. Virgin Islands Agricultural Experiment Station Report No. 9. College of the Virgin Islands, Agricultural Experiment Station, St. Croix, USVI	Unknown[1]	Forest cover	1976	This estimate comes from a forestry research problem analysis published in 1976. The authors mention using aerial photographs from 1971, although they do not explicitly state this methodology was used for estimating forest cover.
Conservation Data Center, UVI-ECC. 2001. Virgin Islands Rapid Ecological Assessment. Published by the University of the Virgin Islands, No. 2 John Brewers Bay, St. Thomas, VI 00802	High[2]	Vegetation cover, land cover	1994-2000	Forest coverage estimates were extracted from a GIS vegetation map.
USDA Forest Service forest inventory completed in 2004	High	Individual tree measurements from forest inventory	2004	Data from a recently completed forest inventory of the US Virgin Islands.

[1] Quality cannot be assessed because there is no documentation of the methods or definitions.
[2] Assessed as High quality because methods and vegetation class definitions are well documented by the Conservation Data Center's vegetation mapping metadata and accompanying documentation.

5.2.2 Classification and definitions

National class	Definition
Growing stock	All live stems with DBH ≥ 12.5 cm except for palm and tree fern species
Growing stock volume	Outside bark stem volume (m^3) of growing stock taken from a 30 cm stump to a 10 cm minimum upper stem diameter. This volume does not include any branch volume, only main stem volume.

5.2.3 Original data

The data used for estimating forest cover is documented in section 1.2.3. Data from the 2004 forest inventory for mean volume per hectare by forest type is presented below.

National class	Mean Volume (m^3/ha)
Dry forest	12.11
Moist forest	35.15
Woodland	12.11
Mangrove	52.31

5.3 Analysis and processing of national data

5.3.1 Calibration

Forest area was calibrated to FAOSTAT figures as described in the documentation for table T1.

5.3.2 Estimation and forecasting

Mean per hectare growing stock over bark volume was estimated for dry and moist forested life zones, as well as woodlands and mangrove forests and these results are in the tables below.

National class	1990 forest area (ha)	Mean Volume (m^3/ha)	Total Volume (m^3)
Dry forest	9,033.16	12.11	101,132.99
Moist forest	1,194.54	35.15	38,825.23
Woodland	1,641.46	12.11	18,377.39
Mangrove	124.47	52.31	6,019.92
Totals	**11,993.64**		**164,355.53**

National class	2000 forest area (ha)	Mean Volume (m^3/ha)	Total Volume (m^3)
Dry forest	7,792.40	12.11	94,360.10
Moist forest	1,030.47	35.15	36,225.10
Woodland	1,416.00	12.11	17,146.66
Mangrove	107.37	52.31	5,616.76
Totals	**10,346.24**		**153,348.61**

National class	2005 forest area (ha)	Mean Volume (m^3/ha)	Total Volume (m^3)
Dry forest	7,172.02	12.11	86,847.76
Moist forest	948.43	35.15	33,341.09
Woodland	1,303.26	12.11	15,781.55
Mangrove	98.83	52.31	5,169.59
Totals	**9,522.54**		**141,140.00**

[1] Forest area for each forest type was estimated and forecast as described in the documentation for table T1.

5.4 Data for National reporting table T5

FRA 2005 Categories	Volume (million cubic meters over bark)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Growing stock	0.1644	0.1533	0.1411	NDA	NDA	NDA
Commercial growing stock	NDA	NDA	NDA	NDA	NDA	NDA

Specification of country threshold values	Unit	Value	Complementary information
1. Minimum diameter at breast height of trees included in Growing stock (X)	cm	12.5 cm	
2. Minimum diameter at the top end of stem (Y) for calculation of Growing stock	cm	10.0 cm	
3. Minimum diameter of branches included in Growing stock (W)	cm	NA	Estimate does not include branches, only main stem
4. Minimum diameter at breast height of trees in Commercial growing stock (Z)	cm	NA	No commercial g.s. estimates made
5. Volume refers to "Above ground" (AG) or "Above stump" (AS)	AG / AS	AS	Stump height = 30 cm
6. Have any of the above thresholds (points 1 to 4) changed since 1990	Yes/No	No	No estimates made in 1990.
7. If yes, then attach a separate note giving details of the change	Attachment	NA	

5.5 Comments to National reporting table T5

Growing stock represents all species of trees with DBH ≥ 12.5 cm except palms and tree ferns. Growing stock volume is measured outside bark and is only for the main stem and does not include branch volume. Commercial growing stock is not defined due to the lack of comprehensively defined commercial markets for wood products in the US Virgin Islands.

Original USVI forest inventory data is unpublished at this time, but will be made publicly available through the USDA Forest Service Forest Inventory and Analysis website. Mean per hectare growing stock outer bark volume was estimated for dry and moist forested life zones, as well as woodlands and mangrove forests using the forest inventory data collected in the USVI in 2004.

The data used for estimating forest cover is documented in section 1.2.3. Forest area was calibrated to FAO STAT figures as described in the documentation for table T1.
Per hectare volume values were then multiplied by the number of hectares of each respective forest category for the years 1990, 2000, and 2005 to estimate the total values for table T5.

6 Table T6 – Biomass stock

6.1 FRA 2005 Categories and definitions

Category	Definition
Above-ground biomass	All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage.
Below-ground biomass	All living biomass of live roots. Fine roots of less than 2mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Dead wood biomass	All non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.

6.2 National data

6.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Padda, D. S. 1976. Virgin Islands Forestry Research: A Problem Analysis. Virgin Islands Agricultural Experiment Station Report No. 9. College of the Virgin Islands, Agricultural Experiment Station, St. Croix, USVI	Unknown[1]	Forest cover	1976	This estimate comes from a forestry research problem analysis published in 1976. The authors mention using aerial photographs from 1971, although they do not explicitly state this methodology was used for estimating forest cover.
Conservation Data Center, UVI-ECC. 2001. Virgin Islands Rapid Ecological Assessment. Published by the University of the Virgin Islands, No. 2 John Brewers Bay St. Thomas, VI 00802	High[2]	Vegetation cover, land cover	1994-2000	Forest coverage estimates were extracted from a GIS vegetation map.
USDA Forest Service forest inventory completed in 2004	High	Individual tree measurements from forest inventory	2004	Data from a recently completed forest inventory of the US Virgin Islands.

[1] Quality cannot be assessed because there is no documentation of the methods or definitions.
[2] Assessed as High quality because methods and vegetation class definitions are well documented by the Conservation Data Center's vegetation mapping metadata and accompanying documentation.

6.2.2 Classification and definitions

National class	Definition
Above-ground biomass	Total biomass in oven-dry kilograms of all live above-ground tree parts, including foliage, as estimated from regression equations that predict above-ground biomass from individual tree DBH and total height measurements. Estimated for all trees with DBH ≥ 2.5 cm.
Below-ground biomass	Total biomass in oven-dry kilograms of all live below-ground tree parts, as estimated from a regression equation modelling the relationship between above-ground biomass and below-ground biomass. Estimated for all trees with DBH ≥ 2.5 cm.

6.2.3 Original data

The data used for estimating forest cover is documented in section 1.2.3. Mean per hectare above and below-ground biomass was estimated for dry and moist forested life zones, as well as woodlands and mangrove forests, and is presented below.

National class	AGB (Mg/ha)	BGB (Mg/ha)
Dry forest	41.43	9.90
Moist forest	83.15	18.06
Woodland	41.43	9.90
Mangrove	58.31	11.57

6.3 Analysis and processing of national data

6.3.1 Calibration

Forest area was calibrated to FAO STAT figures as described in the documentation for table T1.

6.3.2 Estimation and forecasting

Per hectare volumes values were then multiplied by the number of hectares of each respective forest category for the years 1990, 2000, and 2005 (see table T1).

National class	1990 forest area[1] (ha)	AGB (Mg/ha)	Total AGB (Mg)	BGB (Mg/ha)	Total BGB (Mg)
Dry forest	9,033.16	41.43	374,265.23	9.90	89,451.04
Moist forest	1,194.54	83.15	99,327.32	18.06	21,572.84
Woodland	1,641.46	41.43	68,009.66	9.90	16,254.61
Mangrove	124.47	58.31	7,258.48	11.57	1,439.79
Totals	**11,993.64**		**548,860.68**		**128,718.28**

National class	2000 forest area[1] (ha)	AGB (Mg/ha)	Total AGB (Mg)	BGB (Mg/ha)	Total BGB (Mg)
Dry forest	7,792.40	41.43	322,857.61	9.90	77,164.39
Moist forest	1,030.47	83.15	85,684.10	18.06	18,609.67
Woodland	1,416.00	41.43	58,668.11	9.90	14,021.94
Mangrove	107.37	58.31	6,261.48	11.57	1,242.03
Totals	**10,346.24**		**473,471.30**		**111,038.03**

National class	2005 forest area[1] (ha)	AGB (Mg/ha)	Total AGB (Mg)	BGB (Mg/ha)	Total BGB (Mg)
Dry forest	7,172.02	41.43	297,153.80	9.90	71,021.07
Moist forest	948.43	83.15	78,862.49	18.06	17,128.09
Woodland	1,303.26	41.43	53,997.34	9.90	12,905.60
Mangrove	98.83	58.31	5,762.98	11.57	1,143.15
Totals	**9,522.54**		**435,776.61**		**102,197.91**

[1] Forest area for each forest type was estimated and forecast as described in the documentation for table T1.

6.4 Data for National reporting table T6

FRA 2005 Categories	Biomass (million metric tonnes oven-dry weight)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Above-ground biomass	0.5489	0.4735	0.4358	ND	ND	ND
Below-ground biomass	0.1287	0.1110	0.1022	ND	ND	ND
Dead wood biomass	ND	ND	ND	ND	ND	ND
TOTAL	**0.6361**	**0.5845**	**0.5380**	**ND**	**ND**	**ND**

Thresholds used by the country are the following:
Above-ground biomass (AGB) was calculated for all living trees with DBH ≥ 2.5 cm.

6.5 Comments to National reporting table T6

Mean per hectare above-ground biomass was estimated for dry forest moist forest, woodlands and mangrove forests by applying biomass regression equations to individual trees in the forest inventory data collected in the US Virgin Islands in 2004. The following equations were used to calculate individual living tree biomass from the 2004 US Virgin Islands inventory data.

Subtropical Moist forest (Brown et al. 1989)

$$AGB = e^{(-3.1141+0.9719*\ln D_{BH}^2 H_T)}$$

Subtropical Dry forest with ppt > 900 (Brown 1997)

$$AGB = e^{(-1.996+2.32*\ln D_{BH}^2)}$$

Mangrove species *Rhizophora mangle* (Cintrón and Schaeffer-Novelli 1984)

$$AGB = [125.957 * (D_{BH}^2 H_T^{0.8557})]/1000$$

Mangrove species *Laguncularia racemosa* (Cintrón and Schaeffer-Novelli 1984)

$$AGB = [70.0513 * (D_{BH}^2 H_T^{0.9084})]/1000$$

Mangrove species *Avicennia germinans* (Fromard et al. 1998)

$$AGB = 0.14 * (D_{BH}^{2.4})$$

Below-ground biomass was then estimated by applying the regression equation for tropical forest in Cairns et al. (1997) which expresses below-ground biomass as a function of above-ground biomass.

$$BGB = e^{(-1.0587+0.8836 \ln AGB)}$$

Individual tree above and below-ground biomass estimates were then expanded to the per hectare basis and mean values for each forest class calculated. Each classes per hectare biomass values were then multiplied by the number of hectares of each respective forest class for the years 1990, 2000, and 2005.

Literature cited

Brown, S. 1997. Estimating biomass and biomass change in tropical forests. A primer. FAO Forestry Paper 134, Food and Agriculture Organization of the United Nations, Rome.

Brown, S., A. J. Gillespie, and A. E. Lugo. 1989. Biomass estimation methods for tropical forests with application to forest inventory data. Forest Science **35**:881-902.

Cairns, M. A., S. Brown, E. H. Helmer, and G. A. Baumgardner. 1997. Root biomass allocation in the world's upland forests. Oecologia **111**:1-11.

Cintrón, G., and Y. Schaeffer-Novelli. 1984. Caracteristicas y desarollo estructural de los manglares de Norte y Sur America. Ciencia Interamericana **25**:4-15.

Fromard, F., H. Puig, E. Mougin, G. Marty, J. L. Betoulle, and L. Cadamuro. 1998. Structure, above-ground biomass and dynamics of mangrove ecosystems: new data from French Guiana. Oecologia **115**:39-53.

7 Table T7 – Carbon stock

7.1 FRA 2005 Categories and definitions

Category	Definition
Carbon in above-ground biomass	Carbon in all living biomass above the soil, including stem, stump, branches, bark, seeds, and foliage.
Carbon in below-ground biomass	Carbon in all living biomass of live roots. Fine roots of less than 2 mm diameter are excluded, because these often cannot be distinguished empirically from soil organic matter or litter.
Carbon in dead wood biomass	Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.
Carbon in litter	Carbon in all non-living biomass with a diameter less than a minimum diameter chose by the country for lying dead (for example 10 cm), in various states of decomposition above the mineral or organic soil. This includes the litter, fumic, and humic layers.
Soil carbon	Organic carbon in mineral and organic soils (including peat) to a specified depth chosen by the country and applied consistently through the time series.

7.2 National data

7.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Padda, D. S. 1976. Virgin Islands Forestry Research: A Problem Analysis. Virgin Islands Agricultural Experiment Station Report No. 9. College of the Virgin Islands, Agricultural Experiment Station, St. Croix, USVI	Unknown[1]	Forest cover	1976	This estimate comes from a forestry research problem analysis published in 1976. The authors mention using aerial photographs from 1971, although they do not explicitly state this methodology was used for estimating forest cover.
Conservation Data Center, UVI-ECC. 2001. Virgin Islands Rapid Ecological Assessment. Published by the University of the Virgin Islands, No. 2 John Brewers Bay St. Thomas, VI 00802	High[2]	Vegetation cover, land cover	1994-2000	Forest coverage estimates were extracted from a GIS vegetation map.
USDA Forest Service forest inventory completed in 2004	High	Individual tree measurements from forest inventory	2004	Data from a recently completed forest inventory of the US Virgin Islands.

[1] Quality cannot be assessed because there is no documentation of the methods or definitions.
[2] Assessed as High quality because methods and vegetation class definitions are well documented by the Conservation Data Center's vegetation mapping metadata and accompanying documentation.

7.2.2 Classification and definitions

National class	Definition
Above-ground carbon	Total carbon in oven-dry kilograms of all live above-ground tree parts, including stem, stump, branches, bark, seeds, and foliage, as estimated from regression equations that predict above-ground biomass from individual tree DBH and total height measurements, and then multiplying by a factor of 0.5. Estimated for all trees with DBH ≥ 2.5 cm.
Below-ground carbon	Total carbon in oven-dry kilograms of all live below-ground tree parts, as estimated from a regression equation modelling the relationship between above-ground biomass and below-ground biomass, then multiplying by a factor of 0.5. Estimated for all trees with DBH ≥ 2.5 cm.

Note: If different national data sources use different classes and definitions, a table such as above is needed for each relevant data source.

7.2.3 Original data

The data used for estimating forest cover is documented in section 1.2.3.

National class	AGB[1] (Mg/ha)	AGC[2] (Mg/ha)	BGB[1] (Mg/ha)	BGC[2] Mg/ha
Dry forest	41.43	20.72	9.90	4.95
Moist forest	83.15	41.58	18.06	9.03
Woodland	41.43	20.72	9.90	4.95
Mangrove	8.31	4.16	11.57	5.79

[1] Above and below-ground biomass calculated using regression equations documented in section 6.6.
[2] Carbon in above and below-ground biomass was estimated by multiplying above and below-ground biomass values from table T6 by 0.5.

7.3 Analysis and processing of national data

7.3.1 Calibration

Forest area was calibrated to FAO STAT figures as described in the documentation for table T1.

7.3.2 Estimation and forecasting

National class	1990 forest area[1] (ha)	AGC[2] (Mg/ha)	Total AGC (Mg)	BGC[2] (Mg/ha)	Total BGC (Mg)
Dry forest	9,033.16	20.72	187,121.91	4.95	44,714.14
Moist forest	1,194.54	41.58	49,663.00	9.03	10,786.70
Woodland	1,641.46	20.72	34,002.84	4.95	8,125.23
Mangrove	124.47	4.16	517.17	5.79	720.06
Totals	**11,993.64**		**271,304.93**		**64,346.12**

National class	2000 forest area[1] (ha)	AGC[2] (Mg/ha)	Total AGC (Mg)	BGC[2] (Mg/ha)	Total BGC (Mg)
Dry forest	7,792.40	20.72	161,419.57	4.95	38,572.38
Moist forest	1,030.47	41.58	42,841.79	9.03	9,305.14
Woodland	1,416.00	20.72	29,332.44	4.95	7,009.20
Mangrove	107.37	4.16	446.12	5.79	621.14
Totals	**10,346.24**		**234,039.92**		**55,507.86**

National class	2005 forest area[1] (ha)	AGC[2] (Mg/ha)	Total AGC (Mg)	BGC[2] (Mg/ha)	Total BGC (Mg)
Dry forest	7,172.02	20.72	148,568.39	4.95	35,501.50
Moist forest	948.43	41.58	39,430.98	9.03	8,564.32
Woodland	1,303.26	20.72	26,997.03	4.95	6,451.14
Mangrove	98.83	4.16	410.64	5.79	571.73
Totals	**9,522.54**		**215,407.04**		**51,088.69**

[1] Forest area for each forest type was estimated and forecast as described in the documentation for table T1.
[2] Carbon in above and below-ground biomass was estimated by multiplying above and below-ground biomass values from table T6 by 0.5.

7.4 Data for National reporting table T7

FRA 2005 Categories	Carbon (Million metric tonnes)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Carbon in above-ground biomass	0.2537	0.2368	0.2179	ND	ND	ND
Carbon in below-ground biomass	0.0644	0.0555	0.0511	ND	ND	ND
Sub-total: Carbon in living biomass	**0.3181**	**0.2923**	**0.2690**	**ND**	**ND**	**ND**
Carbon in dead wood	ND	ND	ND	ND	ND	ND
Carbon in litter	ND	ND	ND	ND	ND	ND
Sub-total: Carbon in dead wood and litter	ND	ND	ND	ND	ND	ND
Soil carbon to a depth of _____ cm	ND	ND	ND	ND	ND	ND
TOTAL CARBON	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

7.5 Comments to National reporting table T7

Forest area for each forest class was estimated and forecast as described in the documentation for table T1. Above and below-ground biomass were estimated as described in the documentation for table T6. Carbon in above and below-ground biomass was estimated by multiplying above and below-ground biomass values from table T6 by 0.5.

8 Table T8 – Disturbances affecting health and vitality

No information has been found to support any estimates for this reporting table.

9 Table T9 – Diversity of tree species

9.1 FRA 2005 Categories and definitions

Category	Definition
Number of native tree species	The total number of native tree species that have been identified within the country.
Number of critically endangered tree species	The number of native tree species that are classified as "Critically endangered" in the IUCN red list.
Number of endangered tree species	The number of native tree species that are classified as "Endangered" in the IUCN red list.
Number of vulnerable tree species	The number of native tree species that are classified as "Vulnerable" in the IUCN red list.

9.2 National data

9.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
IUCN Species Survival Commision. 2004. IUCN Red List of Threatened Species.	High	Species status	2004	Website search used http://www.redlist.org/

9.2.2 Classification and definitions

No different national classes were used.

9.2.3 Original data

The IUCN Red List of Threatened Species at http://www.redlist.org/ was used to gather information on threatened species.

9.3 Data for National reporting table T9

FRA 2005 Categories	**Number of species (year 2000)**
Native tree species	NDA
Critically endangered tree species	2
Endangered tree species	4
Vulnerable tree species	1

9.4 Comments to National reporting table T9

The following tree species were found in the 2004 IUCN Red List of Threatened Species:

Critically endangered:
Buxus vahlii, *Callicarpa ampla*

Endangered:
Guaiacum officinale, *Maytenus cymos, Stahlia monosperma, Zanthoxylum thomasianum*

Vulnerable:
Chrysophyllum pauciflorum

10 Table T10 – Growing stock composition

10.1 FRA 2005 Categories and definitions

List of species names (scientific and common names) of the ten most common species. Species scientific and common names follow those listed in the online US Department of Agriculture's PLANTS data base (http://www.plants.usda.gov).

10.2 National data

10.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Conservation Data Center, UVI-ECC. 2001. Virgin Islands Rapid Ecological Assessment. Published by the University of the Virgin Islands, No. 2 John Brewers Bay St. Thomas, VI 00802	High[1]	Vegetation cover, land cover	1994-2000	Forest coverage estimates were extracted from a GIS vegetation map.
USDA Forest Service forest inventory completed in 2004	High	Individual tree measurements from forest inventory	2004	Data from a recently completed forest inventory of the US Virgin Islands.

[1] Assessed as High quality because methods and vegetation class definitions are well documented by the Conservation Data Center's vegetation mapping metadata and accompanying documentation.

10.2.2 Original data

The data used for estimating forest cover is documented in section 1.2.3. Original data is unpublished at this time, but will be made publicly available through the USDA Forest Service's Forest Inventory and Analysis website.

10.3 Analysis and processing of national data

10.3.1 Calibration

Forest area was calibrated to FAO STAT figures as described in the documentation for table T1.

10.3.2 Estimation and forecasting

Growing stock volume was estimated using the methods described in the documentation for table T5. Forest inventory data from 2004 was used to rank the top ten species according to growing stock outer bark volume (as defined in section 5). The percentage of total volume for

each species was estimated from the 2004 inventory data, and that percentage applied to the 2000 growing stock volume. The decision was made not to extrapolate growing stock composition to 1990 because of the possibility of species composition changes over that ten year period.

10.4 Data for National reporting table T10

FRA 2005 Categories / Species name (Scientific name and common name)	**Growing Stock in Forests (million cubic meters)**	
	1990	**2000**
Guapira fragrans (black mampoo)	ND	0.0276
Melicoccus bijugatus (Spanish lime)	ND	0.0168
Swietenia mahagoni (West Indian mahogany)	ND	0.0158
Bursera simaruba (gumbo limbo)	ND	0.0155
Bourreria succulenta (bodywood)	ND	0.0097
Acacia muricata (spineless wattle)	ND	0.0091
Pisonia subcordata (water mampoo)	ND	0.0080
Andira inermis (cabbagebark tree)	ND	0.0054
Maytenus laevigata (white cinnamon)	ND	0.0043
Manilkara bidentata (bulletwood)	ND	0.0042
Remainder of species	ND	0.0369
TOTAL	ND	**0.1533**

10.5 Comments to National reporting table T10

Growing stock volume was estimated using the methods described in the documentation for table T5. Forest inventory data from 2004 was used to rank the top ten species according to growing stock outer bark volume (as defined in section 5). The percentage of total volume for each species was estimated from the 2004 inventory data, and that percentage applied to the 2000 growing stock volume. The decision was made not to extrapolate growing stock composition to 1990 because of the possibility of species composition changes over that ten year period.

Growing stock composition represents the 10 species with the most stem volume for the US Virgin Islands. However, two of the mostly commonly encountered species in the forest inventory, (*Leucaena leucocephala* is the most commonly found species and *Cordia alba* is the fifth most commonly found species) had no growing stock volume; that is, there were no trees with DBH ≥ 12.5 cm because these species are typically found in very young, highly disturbed stands. Overall the forests of the US Virgin Islands are highly disturbed and in varying successional stages. Therefore, table T10 does not fully reflect species composition or relative ranking of all forest trees; rather it reflects the composition and ranking of trees with DBH ≥ 12.5.

11 Table T11 – Wood removal

No information has been found to support any estimates for this reporting table.

12 Table T12 – Value of wood removal

No information has been found to support any estimates for this reporting table.

13 Table T13 – Non-wood forest product removal

No information has been found to support any estimates for this reporting table.

14 Table T14 – Value of non-wood forest product removal

No information has been found to support any estimates for this reporting table.

15 Table T15 – Employment in forestry

No information has been found to support any estimates for this reporting table.